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# HEIGHT AND WEIGHT OF DEPENDENT CHILDREN

GERSHEL



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DEPARTMENT OF CHILD-HELPING  
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AN INVESTIGATION INTO THE  
GROWTH IN HEIGHT AND WEIGHT  
OF DEPENDENT CHILDREN

By

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# AN INVESTIGATION INTO THE GROWTH IN HEIGHT AND WEIGHT OF DEPENDENT CHILDREN, WHEN ADMITTED TO CHILD- CARING INSTITUTIONS

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## PART I HEIGHT

ANTHROPOMETRIC studies, particularly those affecting children, have received exhaustive investigation at the hands of men who have devoted a lifetime of study and painstaking effort to collect data from which deductions may be made of benefit to the race. Work of this nature necessarily involves a great amount of patience, and too great credit cannot be accorded to men like Boas, Bowditch, Porter, Burk and Hitchcock in this country; Sak and Weissenberg in Russia; Key and Schmid-Mennard in Germany and others, for their exhaustive investigations into a department of science in which the only reward to be expected must be a consciousness that contributions to the fund of knowledge on the subject must result in bettering conditions, and the results that make for general uplift.

The writer has been peculiarly situated for many years past in that he has had exceptional opportunities for making investigations along the definite line of the anthropological study of Jewish dependent children, *i. e., children at the time of admission to child-caring institutions.*

While the general subject of growth in height and weight of children has been treated by able students, and

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exhaustive results have been obtained, no work exists, so far as the writer has found after a thorough and diligent search, which treats of this peculiar and important phase of the subject.

The Jewish population of this country, numbering now more than 2,000,000, the constantly increasing stream of Jewish immigration to the United States, and particularly to the City of New York, and the necessarily increasing number of dependent Jewish children, make this subject interesting, and make it necessary to have at command accurate statistical information for the better handling of Jewish dependent children.

It seems strange that there appears no published work on the subject of growth in height and weight of children, Jewish or non-Jewish, concerning the physical condition of children about to become inmates of child-caring institutions. When it is considered that there were in the United States, for 1904, according to the Bureau of Census, Department of Commerce and Labor, 92,289 dependent children below the age of sixteen years cared for by 1075 institutions, which number does not include many additional thousands of dependent children cared for in other ways, the value of such data can readily be seen and its influence appreciated.

The subject is now receiving more attention than ever before, and its influence is better recognized, as shown by the fact that as late as 1909 an earnest attempt was made to organize a National Children's Bureau, the scope of the scheme being to gather statistics and data concerning the management and care of dependent children of all nationalities and religions in the United States. Mr. Theodore Roosevelt, then President, was personally interested in this movement and presided at the Conference, at which were present representatives from the many child-caring institutions in different parts of the country. Unfortunately, no



final results were attained, but the definite need of such a bureau was demonstrated, and it is confidently hoped that within the next few years such a bureau will be actually in existence, where desired information of this character can be readily obtained, and which information will be authoritative.

One of the difficulties encountered by the writer in

NOTE.

Page 4, paragraph 4.

Dr. Gershel's reference to the proposed National Children's Bureau (p. 4) outlines but one function of such an agency. Its full scope is "to collect and disseminate information affecting the welfare of children" without specification as to any special classes of children.

Page 5, paragraph 4.

It will be noted that Dr. Gershel's definition of dependent children refers only to the special class of children with which his own paper deals.

Generically, the term "dependent child" refers to one who is dependent for care or support upon other than his natural guardians, whether or not he is placed in an institution.

Page 6, paragraph 2.

Throughout this paper Dr. Gershel applies the term "Normal" to a child who remains in a natural, non-institutional environment, and uses the word "dependent" to designate a child who is cared for in a charitable institution.

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final results were attained, but the definite need of such a bureau was demonstrated, and it is confidently hoped that within the next few years such a bureau will be actually in existence, where desired information of this character can be readily obtained, and which information will be authoritative.

One of the difficulties encountered by the writer in investigating this subject is the almost universal absence of records of this nature. Weissenberg and Sak in Russia have made anthropological investigations concerning the various races of that country. They have also dealt with the normal so-called better class Jewish children in the Russian Gymnasia or High Schools, and the writer will compare the results of his investigations on *dependent* Jewish American children with the results of the investigations made in Russia on *normal* Jewish children of South Russia, and also with data collected in this country concerning normal American non-Jewish children. American anthropologists have carefully studied the growth of normal American children, but this is the first attempt to study the growth of *dependent* American Jewish children, the first generation to be born in this country of foreign Jewish parents.

The writer, as stated, has for many years past been personally in charge as attending physician of thousands of such dependent Jewish children, and this information has been obtained at first hand, covering a number of years, and it is hoped that the necessity of obtaining general information on this subject will be seen by others, to the end that complete data and measurements of dependent children of all nationalities and religions may be obtained and statistics and comparative results looked for.

It will not be amiss at this stage to state what is meant by "dependent children"; the writer refers particularly to children either supported or about to be supported by public or semi-public institutions, owing to the poverty

of parents or those on whom the duty of support is cast—children committed through the Department of Dependent Children of the City of New York to Jewish child-caring institutions. This paper deals particularly with the dependent children of Jews in the City of New York—children who are generally classified as orphans, half-orphans, or the offspring of destitute parents.

It is interesting to note that the Jew does not cast the duty of the support of his offspring on charitable institutions until this action becomes absolutely unavoidable, and the lower east side of the Borough of Manhattan with its many underfed children emphasizes this statement. The surviving parent of the half-orphan child only seeks to commit it to the care of the city or other charitable institutions after vain endeavors to maintain the child at home; and almost invariably, prior to admission to an institution, such children have lived in poverty for a long period, under the poorest hygienic surroundings and have suffered the privations which destitution brings. Some of these children are also sent to institutions because of serious illness and poverty of one or both parents, or because the father has deserted his children. The writer has particularly noticed in one of the largest of the Jewish child-caring institutions in New York city, that the children at the time they are committed to the institution are ill-nourished and show a poor physical condition. At the time of admission to the institution, the weight and height of these children have been taken, and it is the purpose of this paper to compare the results of the investigations with reference to height and weight, with the results of investigations made on normal Jewish children in South Russia and normal non-Jewish children in this country, meaning by normal children, children that are not dependent for their support and maintenance on public charity.

In weight and measurements the United States

standards of pounds and inches have been used as a matter of convenience. Where statistics of foreign countries using the metric system appear, the kilogramme and centimeter have been reduced by the writer to pounds and inches.

In a future article will be discussed the study of the weights and statures of dependent American Jewish children for successive years with reference to the same individual, and the effect of sanitary conditions, normal diet, etc., on the physical development of these children, for various periods, during the time that one of the well-equipped child-caring institutions for dependent Jewish children in New York City was their home.

The number of Jews in the City of Greater New York, May, 1910, approximated 1,000,000. Of these there are of Russian nativity, or Russian descent, approximately, 650,000. By reason of the large proportion of Russian Jews in the city of New York, dependent Jewish children of Russian descent in institutions are predominant, representing about 90 per cent, and it must be noted that the data which appear in this paper are taken from dependent Jewish children containing this large percentage of children of Russian descent.

The children studied are mainly those born in this country of Russian Jewish parentage, and are the first generation born in this country; of course, there is always a very small percentage of those born abroad and brought here during the first few years of their life, and a further very small percentage of mixed Jewish parentage. The children also are the offspring of parents and forbears who for centuries have suffered from the oppression and tyranny of Russian persecution, and from the wretched conditions of the hated pale and ghettos of Russia. Attention to this fact is called here to suggest that it would be unfair to make a comparison between such children and Jewish children or non-Jewish children who have had better ad-

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vantages, whether maintained in institutions for dependent children or otherwise.

A study into the family history of 1610 individuals of the writer's series of 3093 children shows that more than 20 per cent of their parents were the victims of tuberculosis; 287 of these children having had one parent tuberculous, and 39 with both parents, which fact was mostly active in causing these children to become dependent on public charity for their support. One hundred and seventeen, or 7 per cent, had one parent who had been committed to an institution for the insane. While the majority of these children came from parents suffering from diseases such as tuberculosis and other lung affections, insanity, rheumatism, heart affections, etc., the writer has excluded from his investigations in this paper all children showing any organic disease at the time of the examination.

The children under investigation were between the ages of three and sixteen years. The weights were taken in pounds, the children being in ordinary indoor costume, and represent the average weight of costume during the year. The statures were taken in inches, linear measurements being taken at the nearest inch, and the weights at the nearest pound. Statures were taken standing, the children standing close to the measuring rod, heels together, heads erect, looking straight forward. Where the age is given it refers to the last birthday, but since the average of the year is based on children born at the beginning of a year and those born in the latter part of the same year, this average is the age of the child approximately in the middle of the same year. This same method has been pursued throughout. In other words, the average height given of a child of nine years really means the height of a child nine and one-half years.



TABLE A.—TABLE SHOWING THE AGES OF THE CHILDREN, AND THE NUMBER OF BOYS AND GIRLS OF EACH AGE

| <i>Age</i>   | <i>Boys</i> | <i>Girls</i> |
|--------------|-------------|--------------|
| 3 years..... | 17          | 20           |
| 4 ".....     | 104         | 56           |
| 5 ".....     | 227         | 177          |
| 6 ".....     | 274         | 198          |
| 7 ".....     | 242         | 177          |
| 8 ".....     | 237         | 169          |
| 9 ".....     | 243         | 128          |
| 10 ".....    | 222         | 97           |
| 11 ".....    | 162         | 85           |
| 12 ".....    | 109         | 36           |
| 13 ".....    | 48          | 30           |
| 14 ".....    | 12          | 12           |
| 15 ".....    | 3           | 8            |
| Total.....   | 1900        | 1193         |

The above table shows the age of the children and the number of boys and girls investigated at each age between the ages of three years and fifteen years.

TABLE B.—SHOWING AVERAGE HEIGHT FOR SUCCESSIVE AGES OF 1778 JEWISH DEPENDENT BOYS

| <i>Age</i>   | <i>Number of Observations</i> | <i>Average for Each Year in Inches</i> | <i>Absolute Annual Increase</i> |
|--------------|-------------------------------|--|---------------------------------|
| 3 years..... | 12                            | 34.42                                  | ..                              |
| 4 ".....     | 91                            | 38.59                                  | 4.17                            |
| 5 ".....     | 203                           | 40.14                                  | 1.55                            |
| 6 ".....     | 259                           | 42.41                                  | 2.27                            |
| 7 ".....     | 219                           | 44.67                                  | 2.26                            |
| 8 ".....     | 215                           | 46.67                                  | 2.00                            |
| 9 ".....     | 229                           | 48.40                                  | 1.73                            |
| 10 ".....    | 215                           | 50.20                                  | 1.80                            |
| 11 ".....    | 169                           | 50.20                                  | 0.00                            |
| 12 ".....    | 106                           | 53.01                                  | 2.81                            |
| 13 ".....    | 46                            | 54.22                                  | 1.21                            |
| 14 ".....    | 12                            | 54.42                                  | 0.20                            |
| 15 ".....    | 7                             | 55.00                                  | 0.58                            |

All of the investigations in the above table in this article are based upon the examination into weight and height of these 3093 children ranging between the ages of three and fifteen years, and consisting of 1900 boys and 1193 girls; and show the absolute annual increase for suc-

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cessive years, it being noted that the observations have been taken *only once*, not repeated on the same individual.

From the above table we see that such boys grow more rapidly between the third and fourth years, and have an absolute annual increase of 4.17 inches. The growth between the fourth and fifth years is less rapid, the absolute annual increase being only 1.55 inches. Between the fifth and sixth years, the rapidity of growth increases, the absolute annual increase being 2.27 inches. Between the sixth and the eighth years the absolute annual increase is 4.25 inches. From the eighth to the eleventh years the rapidity of growth diminishes until the absolute annual increase between the tenth and eleventh years is 0.00. From the eleventh to the twelfth years there is an acceleration of the rapidity of growth, the absolute annual increase being 2.81 inches. From the twelfth to the thirteenth years the rapidity of growth is again retarded, and from the thirteenth to the fourteenth years the absolute annual increase is but 0.20. In the above table it will be noted that the largest gains are made between the third and fourth, and the eleventh and twelfth years.

TABLE C.—SHOWING AVERAGE HEIGHT FOR SUCCESSIVE AGES OF 1118 JEWISH DEPENDENT GIRLS

| <i>Age</i>   | <i>Number of Observations</i> | <i>Average for Each Year in Inches</i> | <i>Absolute Annual Increase</i> |
|--------------|-------------------------------|--|---------------------------------|
| 3 years..... | 13                            | 35.00                                  | ..                              |
| 4 ".....     | 52                            | 38.05                                  | 3.05                            |
| 5 ".....     | 161                           | 40.27                                  | 2.22                            |
| 6 ".....     | 174                           | 41.85                                  | 1.58                            |
| 7 ".....     | 167                           | 44.40                                  | 2.55                            |
| 8 ".....     | 167                           | 46.40                                  | 2.00                            |
| 9 ".....     | 124                           | 49.00                                  | 2.70                            |
| 10 ".....    | 93                            | 49.00                                  | 0.00                            |
| 11 ".....    | 84                            | 52.18                                  | 3.18                            |
| 12 ".....    | 34                            | 54.53                                  | 2.35                            |
| 13 ".....    | 28                            | 56.18                                  | 1.65                            |
| 14 ".....    | 14                            | 56.44                                  | 0.26                            |
| 15 ".....    | 7                             | 58.71                                  | 2.27                            |

In the above table we find a considerable increase in growth between the third and fourth years, the absolute annual increase being 3.01 inches. The rapidity of growth is less from the fourth to the sixth year. From the sixth to the seventh years the absolute annual increase is 2.55 inches. From the eighth to the tenth years growth is retarded, the absolute annual increase between the ninth and tenth years being 0.00. This is followed, between the tenth and eleventh years, by an acceleration of growth, the absolute annual increase being 3.18 inches. From the eleventh to the fourteenth years there is again noted a gradual retardation of growth, the absolute annual increase from the thirteenth to the fourteenth years being 0.26 inch. It will be seen that the greatest gains in statures were made between the third and fourth, and between the tenth and eleventh years. It may also be interesting to draw attention to the fact that statures became stationary in the boys between the tenth and eleventh years, and in the girls between the ninth and tenth years.

Since we have no proper standards for comparison, which would be the measurements taken from normal American Jewish children living with their parents under normal conditions, I will first attempt to compare my results with the results of measurements taken of normal Jewish children in South Russia. The literature on this particular subject in foreign countries is meagre. The following are the most important articles dealing with the anthropology of Jews:

1. Andree, R.—The Anthropology of Jews. Leipsic, 1881.
2. Blechman, B.—Anthropology of Jews. Dorpat, 1882. Measurement taken on 100 adult individuals, inhabitants of Riga, according to the method proposed by Broca.
3. Ikow, K. N.—New Contributions to the Anthropology of Jews. Archiv für Anthropologie—volume 15. This contains the head measurements of twenty Jews of different ages and sexes of various parts of Russia as well as the measurements of twenty Karaim Jews.

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4. Jaschinsky, S.—Investigation of the development, height, circumference of chest and the weight of 569 Poles and 146 Jews of school age. University of Warsaw, 1889.
5. Kopernicki, J., Majer, J.—The Physical Characteristics of the Galicians, Cracow, 1876 and 1885. This work deals with Poles, Ruthenians and Jews, the height, circumference of the chest, and complexion.
6. Sak, N.—The physical development of children in secondary schools of Moscow, 1892. Of the 6845 school children investigated, there are 396 Jews.
7. Stieda, G.—Contributions to the Anthropology of the Jews. *Archiv für Anthropologie*, volume 18, 1882. This is an investigation of Dr. Dybowski on sixty-seven Jews in the Government of Minsk.
8. Schultz, G.—Report about measurements of individuals of various nationalities (contains several measurements on twenty Russian Jews). Mentioned by Weissenberg.
9. Virchow, R.—General report dealing with the color of the skin, of the hair and eyes of school children in Germany.
10. Weisbach, A.—Body measurements of different human races. Berlin, 1878.
11. Weissenberg, S.—Anthropological Study of Südrussischen Juden, *Archiv für Anthropologie*. Germany.

While the above bibliography would seem extensive, the criticism with reference to it is that the investigations were made by a few investigators on small numbers of children. Individual idiosyncrasies are too common to permit generalization when small numbers are under investigation. It requires an examination of thousands of children before a fair deduction can be made. Dr. Weissenberg's work shows great study, but unfortunately his deductions are based on the examination of only 473 Jewish children between the ages of five and fifteen years, or 523 between five and sixteen years. The writer takes pleasure in acknowledging his indebtedness to Dr. Weissenberg for his able treatment of this subject. Tables D., E., F., G. and H. exhibit the results of the studies of Dr. S. Weissenberg, Dr. N. Sak and the writer covering Jews of South Russia, children in the Moscow Gymnasium and Jewish dependent children in the United States.

TABLE D.—AVERAGE HEIGHT OF JEWS OF SOUTH RUSSIA

DR. S. WEISSENBERG, 1895

| <i>Age</i>    | <i>Number Measured</i> | MALE          |                         | <i>Number Measured</i> | FEMALE        |                         |
|---------------|------------------------|---------------|-------------------------|------------------------|---------------|-------------------------|
|               |                        | <i>Height</i> | <i>Yearly Increment</i> |                        | <i>Height</i> | <i>Yearly Increment</i> |
|               |                        | Inches        | Inches                  |                        | Inches        | Inches                  |
| 5 years . . . | 10                     | 40.00         | ..                      | 13                     | 39.25         | ..                      |
| 6 " . . .     | 10                     | 42.75         | 2.75                    | 13                     | 42.52         | 3.27                    |
| 7 " . . .     | 24                     | 44.13         | 1.38                    | 20                     | 44.68         | 2.16                    |
| 8 " . . .     | 25                     | 45.51         | 1.38                    | 19                     | 46.06         | 1.38                    |
| 9 " . . .     | 51                     | 47.32         | 1.81                    | 17                     | 47.24         | 1.18                    |
| 10 " . . .    | 82                     | 49.10         | 1.78                    | 18                     | 49.05         | 1.81                    |
| 11 " . . .    | 62                     | 50.40         | 1.30                    | 30                     | 52.20         | 3.15                    |
| 12 " . . .    | 51                     | 52.95         | 2.55                    | 19                     | 55.59         | 3.39                    |
| 13 " . . .    | 53                     | 54.25         | 1.30                    | 18                     | 56.06         | 0.47                    |
| 14 " . . .    | 57                     | 57.00         | 2.75                    | 13                     | 58.42         | 2.36                    |
| 15 " . . .    | 50                     | 58.34         | 1.34                    | 19                     | 59.25         | 0.83                    |
| 16 " . . .    | 50                     | 61.39         | 3.05                    | 19                     | 59.33         | 0.08                    |

TABLE E.—CHILDREN OF VARIOUS RACES IN MOSCOW GYMNASIUM

(SAK, 1892)

HEIGHT

| <i>Age</i>                      | <i>Greek Catholics</i> | <i>Foreigners</i> | <i>Jews</i> |
|---------------------------------|------------------------|-------------------|-------------|
|                                 | Inches                 | Inches            | Inches      |
| 9-10 years . . . . .            | 51.61                  | 50.27             | 50.12       |
| 10-11 " . . . . .               | 52.76                  | 52.75             | 51.18       |
| 11-12 " . . . . .               | 54.37                  | 54.76             | 52.76       |
| 12-13 " . . . . .               | 56.22                  | 56.26             | 54.25       |
| 13-14 " . . . . .               | 58.27                  | 58.07             | 57.25       |
| 14-15 " . . . . .               | 61.34                  | 60.71             | 60.87       |
| 15-16 " . . . . .               | 63.66                  | 63.58             | 62.40       |
| 16-17 " . . . . .               | 65.28                  | 65.83             | 63.86       |
| 17-18 " . . . . .               | 66.22                  | 66.70             | 64.69       |
| 18-19 " . . . . .               | 66.77                  | 66.85             | 64.88       |
| 19-20 " . . . . .               | 67.20                  | 66.50             | 64.49       |
| 20-21 " . . . . .               | 66.85                  | 67.32             | 65.47       |
| Total number measured . . . . . | 5701                   | 503               | 396         |

TABLE F.—CHILDREN OF VARIOUS RACES IN MOSCOW GYMNASIUM

SAK, 1892

ANNUAL INCREMENT (HEIGHT)

| <i>Age</i>      | <i>Greek Catholics<br/>(Russians)</i> | <i>Foreigners</i> | <i>Jews</i> |
|-----------------|---------------------------------------|-------------------|-------------|
|                 | Inches                                | Inches            | Inches      |
| 9-10 years..... | 1.14                                  | 2.48              | 1.06        |
| 10-11 ".....    | 1.61                                  | 2.00              | 1.58        |
| 11-12 ".....    | 1.85                                  | 1.49              | 1.49        |
| 12-13 ".....    | 2.05                                  | 1.81              | 3.00        |
| 13-14 ".....    | 3.07                                  | 2.64              | 3.62        |
| 14-15 ".....    | 2.32                                  | 2.87              | 1.53        |
| 15-16 ".....    | 1.61                                  | 2.24              | 1.46        |
| 16-17 ".....    | 0.94                                  | 0.86              | 0.83        |
| 17-18 ".....    | 0.55                                  | 0.16              | 0.19        |
| 18-19 ".....    | 0.43                                  | ..                | 0.19        |

TABLE G.—SHOWING COMPARISON OF HEIGHT OF JEWISH DEPENDENT CHILDREN WITH THOSE OF WEISSENBERG AND SAK

| Boys         |   |  |                                  | Girls   |  |                                  |
|--------------|---|--|----------------------------------|---|--|----------------------------------|
| <i>Age</i>   | <i>Gershel,<br/>1909,<br/>United<br/>States</i> | <i>Weissen-<br/>berg, 1895,<br/>South<br/>Russia</i> | <i>Sak,<br/>1892,<br/>Moscow</i> | <i>Gershel,<br/>1909,<br/>United<br/>States</i> | <i>Weissen-<br/>berg, 1895,<br/>South<br/>Russia</i> | <i>Sak,<br/>1892,<br/>Moscow</i> |
| 3 years..... | 34.42   | ..   | ..                               | 35.00   | ..   | ..                               |
| 4 ".....     | 38.59   | ..   | ..                               | 38.05   | ..   | ..                               |
| 5 ".....     | 40.14   | 40.00  | ..                               | 40.27   | 39.25  | ..                               |
| 6 ".....     | 42.41   | 42.75  | ..                               | 41.85   | 42.52  | ..                               |
| 7 ".....     | 44.67   | 44.13  | ..                               | 44.40   | 44.68  | ..                               |
| 8 ".....     | 46.67   | 45.51  | ..                               | 46.40   | 46.06  | ..                               |
| 9 ".....     | 48.40   | 47.32  | 50.12                            | 49.00   | 47.24  | ..                               |
| 10 ".....    | 50.20   | 49.10  | 51.18                            | 49.00   | 49.05  | ..                               |
| 11 ".....    | 50.20   | 50.40  | 52.76                            | 52.18   | 52.20  | ..                               |
| 12 ".....    | 53.01   | 52.95  | 54.25                            | 54.53   | 55.59  | ..                               |
| 13 ".....    | 54.22   | 54.25  | 57.25                            | 56.18   | 56.06  | ..                               |
| 14 ".....    | 54.42   | 57.00  | 60.87                            | 56.44   | 58.42  | ..                               |
| 15 ".....    | 55.00   | 58.34  | 62.40                            | 58.71   | 59.25  | ..                               |



TABLE H.—SHOWING ABSOLUTE ANNUAL INCREASE IN HEIGHT

| Age       | Boys                                |  |                          | Girls                               |  |                          |
|-----------|-------------------------------------|--|--------------------------|-------------------------------------|--|--------------------------|
|           | <i>Gershel, 1909, United States</i> | <i>Weissenberg, 1895, South Russia</i> | <i>Sak, 1892, Moscow</i> | <i>Gershel, 1909, United States</i> | <i>Weissenberg, 1895, South Russia</i> | <i>Sak, 1892, Moscow</i> |
| 3 years . | ..                                  | ..                                     | ..                       | ..                                  | ..                                     | ..                       |
| 4 " .     | 4.17                                | ..                                     | ..                       | 3.05                                | ..                                     | ..                       |
| 5 " .     | 1.55                                | ..                                     | ..                       | 2.22                                | ..                                     | ..                       |
| 6 " .     | 2.27                                | 2.75                                   | ..                       | 1.58                                | 3.27                                   | ..                       |
| 7 " .     | 2.26                                | 1.38                                   | ..                       | 2.55                                | 2.16                                   | ..                       |
| 8 " .     | 2.00                                | 1.38                                   | ..                       | 2.00                                | 1.38                                   | ..                       |
| 9 " .     | 1.73                                | 1.81                                   | 1.06                     | 2.70                                | 1.18                                   | ..                       |
| 10 " .    | 1.80                                | 1.78                                   | 1.58                     | 0.00                                | 1.81                                   | ..                       |
| 11 " .    | 0.00                                | 1.30                                   | 1.49                     | 3.18                                | 3.15                                   | ..                       |
| 12 " .    | 2.81                                | 2.55                                   | 3.00                     | 2.35                                | 3.39                                   | ..                       |
| 13 " .    | 1.21                                | 1.30                                   | 3.62                     | 1.65                                | 0.47                                   | ..                       |
| 14 " .    | 0.20                                | 2.75                                   | 1.53                     | 0.26                                | 2.36                                   | ..                       |
| 15 " .    | 0.58                                | 1.34                                   | 1.46                     | 2.27                                | 0.83                                   | ..                       |

## BOYS

From the above table we see that the total growth of the American dependent Jewish boy from the fifth to the fifteenth years amounts to 14.86 inches, whereas the growth for the same period of the Jewish boy of South Russia according to Weissenberg amounts to 18.34 inches, so that the Jewish dependent boys of the city of New York during the period from the fifth to the fifteenth years grow 3.48 inches less than the Jewish boys (not dependent) for the same age living under their normal condition in South Russia.

The Jewish dependent boys of the city of New York from the eighth to the fifteenth years increase in height 8.33 inches. The Jewish boy of South Russia increases in height during the same period 12.83 inches, while the Jewish boys of the city of Moscow increase in height 13.74 inches, so that during the period from the eighth to the fifteenth

TABLE I.—SHOWING THE STATURE OF SUCCESSIVE AGES IN VARIOUS COUNTRIES AND CITIES (INCHES)  
(NON-JEWISH)

| Age      | BOSTON |        | ST. LOUIS |        | OAKLAND |        | MOSCOW |        | IOWA |        | TURIN |        | ENGLAND |        |
|----------|--------|--------|-----------|--------|---------|--------|--------|--------|------|--------|-------|--------|---------|--------|
|          | Male   | Female | Male      | Female | Male    | Female | Male   | Female | Male | Female | Male  | Female | Male    | Female |
| 5½ years | 41.5   | 41.2   | ..        | ..     | ..      | ..     | ..     | ..     | ..   | ..     | 36.2  | 38.0   | 41.0    | 40.6   |
| 6½ "     | 43.7   | 43.3   | 42.9      | 42.4   | 44.1    | 44.4   | ..     | ..     | 45.0 | 44.6   | 46.7  | 40.2   | 44.0    | 42.9   |
| 7½ "     | 45.7   | 45.5   | 44.9      | 44.5   | 45.0    | 44.9   | 44.1   | 43.9   | 47.8 | 46.8   | 44.3  | 43.0   | 46.0    | 44.5   |
| 8½ "     | 47.7   | 47.6   | 46.9      | 46.6   | 47.6    | 46.8   | 46.4   | 45.8   | 49.6 | 49.2   | 46.6  | 45.5   | 47.2    | 47.0   |
| 9½ "     | 49.7   | 49.4   | 49.0      | 48.7   | 49.3    | 49.2   | 48.3   | 47.4   | 51.3 | 51.3   | 48.8  | 47.6   | 49.7    | 48.7   |
| 10½ "    | 51.7   | 51.3   | 50.7      | 50.6   | 51.9    | 51.5   | 51.5   | 49.2   | 53.3 | 53.3   | 49.8  | 50.1   | 51.8    | 51.1   |
| 11½ "    | 53.3   | 53.4   | 52.7      | 52.4   | 53.5    | 53.9   | 53.4   | 51.1   | 55.2 | 54.6   | 50.9  | 51.7   | 53.5    | 53.1   |
| 12½ "    | 55.1   | 55.9   | 54.4      | 54.8   | 55.1    | 56.6   | 55.2   | 52.3   | 57.9 | 57.1   | 52.6  | 52.8   | 55.0    | 56.7   |
| 13½ "    | 57.2   | 58.2   | 56.3      | 57.7   | 58.7    | 58.8   | 57.2   | 56.5   | 58.7 | 58.7   | 55.0  | 56.1   | 56.9    | 57.8   |
| 14½ "    | 59.9   | 59.9   | 58.3      | 59.3   | 59.7    | 61.2   | 59.1   | 57.4   | 61.4 | 61.7   | 57.2  | 58.9   | 59.3    | 59.8   |

This table obtained from Am. Journal Psychology, Vol. 9, No. 3, April, 1898. Frederick Burk: Growth of Children in Height and Weight.

TABLE J.—SHOWING ABSOLUTE ANNUAL INCREASE IN HEIGHT; OBTAINED BY SUBTRACTING SUCCESSIVE AGES FROM TABLE I (INCHES)

| Age              | BOSTON |             | ST. LOUIS |             | OAKLAND |             | IOWA |             | MOSCOW |             | ENGLAND |             | TURIN |             | GERSHEL |             |
|------------------|--------|-------------|-----------|-------------|---------|-------------|------|-------------|--------|-------------|---------|-------------|-------|-------------|---------|-------------|
|                  | Male   | Fe-<br>male | Male      | Fe-<br>male | Male    | Fe-<br>male | Male | Fe-<br>male | Male   | Fe-<br>male | Male    | Fe-<br>male | Male  | Fe-<br>male | Male    | Fe-<br>male |
| 5½-6½ years..... | 2.2    | 2.1         | ..        | ..          | ..      | ..          | ..   | ..          | ..     | ..          | 3.0     | 2.3         | 2.5   | 2.2         | 2.27    | 1.58        |
| 6½-7½ ".....     | 2.0    | 2.2         | 2.0       | 2.1         | ..      | ..          | 2.8  | 2.2         | ..     | ..          | 2.0     | 1.6         | 3.6   | 2.8         | 2.26    | 2.55        |
| 7½-8½ ".....     | 2.0    | 2.1         | 2.0       | 2.1         | 2.6     | 1.9         | 1.8  | 2.4         | 2.3    | 1.9         | 1.1     | 2.1         | 2.3   | 2.5         | 2.00    | 2.00        |
| 8½-9½ ".....     | 1.9    | 1.8         | 2.0       | 2.1         | 1.7     | 2.4         | 1.7  | 2.1         | 1.9    | 1.3         | 2.6     | 2.1         | 2.2   | 2.1         | 1.73    | 2.70        |
| 9½-10½ ".....    | 2.0    | 2.0         | 1.8       | 1.9         | 2.6     | 2.3         | 2.0  | 1.7         | 3.2    | 2.1         | 2.1     | 2.4         | 1.0   | 2.5         | 1.80    | 0.00        |
| 10½-11½ ".....   | 1.7    | 2.1         | 2.0       | 1.9         | 1.6     | 2.4         | 1.9  | 1.5         | 1.9    | 1.9         | 1.7     | 2.0         | 1.1   | 1.6         | 0.00    | 3.18        |
| 11½-12½ ".....   | 1.8    | 2.5         | 1.7       | 2.3         | 1.6     | 2.7         | 1.9  | 3.5         | 1.8    | 1.2         | 1.5     | 3.6         | 1.7   | 2.1         | 2.81    | 2.35        |
| 12½-13½ ".....   | 2.1    | 2.3         | 1.9       | 2.9         | 1.7     | 3.4         | 1.6  | 1.2         | 2.0    | 2.2         | 1.9     | 1.1         | 2.3   | 1.9         | 1.21    | 1.65        |
| 13½-14½ ".....   | 2.7    | 1.8         | 2.2       | 1.7         | 2.9     | 1.2         | 3.0  | 2.5         | 1.9    | ..          | 2.4     | 2.0         | 2.2   | 2.8         | 0.20    | 0.20        |
| 14½-15½ ".....   | 2.4    | 1.2         | 2.5       | 1.7         | 2.1     | 0.7         | 3.0  | 1.6         | 2.5    | ..          | 2.9     | 1.1         | 2.6   | 1.2         | 0.58    | 2.27        |
| Total.....       | 20.8   | 20.1        | 18.1      | 18.7        | 16.8    | 17.0        | 19.7 | 18.7        | 17.5   | 10.6        | 21.2    | 20.3        | 21.5  | 21.7        | 14.86   | 18.54       |

## HEIGHT OF CHILDREN

year the Jewish boys of South Russia increase in height 4.50 inches, and the Jewish boys of Moscow 5.41 inches more than the dependent Jewish boys of the city of New York.

All of the comparisons made so far have been between American Jewish dependent and normal Jewish children in Europe. A study showing comparisons between American Jewish dependent children and normal American (non-Jewish) children will be instructive.

An Analysis of Table "J" for Boys shows the following:

I. That from the fifth to the fifteenth years boys in Boston increase in height 20.8 inches, in England 21.2 inches, Turin 21.5 inches and Jewish dependent boys 14.86 inches, or that Boston boys grow 5.94 inches, English boys 6.34 inches and Turin boys 6.64 inches more from the fifth to the fifteenth years of age than Jewish dependent boys of New York City at that age.

II. That from the seventh to the fifteenth years boys in Boston grow 16.6 inches, in St. Louis 16.1 inches, in Oakland 16.8 inches, Iowa 16.9 inches, Moscow 17.5 inches, England 16.2 inches, Turin 15.4 inches and Jewish dependent boys of New York City 10.33 inches.

So that from the seventh to the fifteenth years the boys

|                                    |             |   |
|------------------------------------|-------------|---|
| Of Boston increase in height . . . | 6.27 inches | } More than the Jewish dependent boys of New York City. |
| " St. Louis " " "                  | 5.77 "      |   |
| " Oakland " " "                    | 6.47 "      |   |
| " Iowa " " "                       | 6.57 "      |   |
| " Moscow " " "                     | 7.17 "      |   |
| " England " " "                    | 5.87 "      |   |
| " Turin " " "                      | 5.07 "      |   |

III. From the fifth to the seventh years boys increase in height as follows:

|   |            |
|---|------------|
| Boston . . . . .                            | 4.2 inches |
| England . . . . .                           | 5.0 "      |
| Turin . . . . .                             | 6.1 "      |
| Jewish dependent boys of New York . . . . . | 4.5 "      |

## HEIGHT AND WEIGHT

So that from the fifth to the seventh years boys

|                                    |            |
|------------------------------------|------------|
| Of England increase in height..... | 0.5 inch   |
| " Turin " " " .....                | 1.6 inches |

more than Jewish dependent boys, and Jewish dependent boys grow 0.3 inch taller than the boys of Boston.

Analysis of Table "J" for Girls shows the following:

I. That from the fifth to the fifteenth years girls in Boston increase in height 20.1 inches, in England 20.3 inches, in Turin 21.7 inches, and Jewish dependent girls 18.54 inches, or

That Boston girls grow 1.56 inches, English girls 1.76 inches, Turin girls 3.16 inches taller from the fifth to the fifteenth years of age than the Jewish dependent girls of New York City of the same age.

II. That from the seventh to the fifteenth years girls in Boston grow 15.8 inches, St. Louis 16.6 inches, Oakland 17.0 inches, Iowa 16.5 inches, England 16.4 inches, Turin 16.7 inches and Jewish dependent girls of the city of New York 14.41 inches.

So that from the seventh to the fifteenth years the girls of

|                                | <i>Inches</i> |   |
|--------------------------------|---------------|---|
| Boston increase in height..... | 1.39          | } More than the Jewish dependent girls of New York City |
| St. Louis " " " .....          | 2.19          |   |
| Oakland " " " .....            | 2.59          |   |
| Iowa " " " .....               | 2.09          |   |
| England " " " .....            | 1.99          |   |
| Turin " " " .....              | 2.29          |   |

III. From the fifth to the seventh years girls in Boston increase in height 4.3 inches, in England 3.9 inches, in Turin 5.0 inches, and Jewish dependent girls 4.1 inches, so that from the fifth to the seventh years girls of Boston grow 0.2 inch and girls of Turin 0.9 inch taller than Jewish dependent girls and Jewish dependent girls grow 0.2 inch taller than girls in England at this age.

TABLE K.—SHOWING AVERAGE HEIGHT; CALCULATED BY DR. BOAS FROM 45,151 BOYS AND 43,298 GIRLS FROM VARIOUS AMERICAN CITIES

| Boys               |                        |                               |                          | Girls                  |                               |                          |
|--------------------|------------------------|-------------------------------|--------------------------|------------------------|-------------------------------|--------------------------|
| Age                | Number of Observations | Average for each year, Inches | Absolute Annual Increase | Number of Observations | Average for each year, Inches | Absolute Annual Increase |
| 5½ years . . . . . | 1535                   | 41.7                          | ..                       | 1260                   | 41.3                          | ..                       |
| 6½ " . . . . .     | 3975                   | 43.9                          | 2.2                      | 3618                   | 43.3                          | 2.0                      |
| 7½ " . . . . .     | 5379                   | 46.0                          | 2.1                      | 4913                   | 45.7                          | 2.4                      |
| 8½ " . . . . .     | 5633                   | 48.8                          | 2.8                      | 5289                   | 47.7                          | 2.0                      |
| 9½ " . . . . .     | 5531                   | 50.0                          | 1.2                      | 5132                   | 49.7                          | 2.0                      |
| 10½ " . . . . .    | 5151                   | 51.9                          | 1.9                      | 4827                   | 51.7                          | 2.0                      |
| 11½ " . . . . .    | 4759                   | 53.6                          | 1.7                      | 4507                   | 53.8                          | 2.1                      |
| 12½ " . . . . .    | 4205                   | 55.4                          | 1.8                      | 4187                   | 56.1                          | 2.3                      |
| 13½ " . . . . .    | 3573                   | 57.5                          | 2.1                      | 3411                   | 58.5                          | 2.4                      |
| 14½ " . . . . .    | 2518                   | 60.0                          | 2.5                      | 2537                   | 60.4                          | 1.9                      |
| 15½ " . . . . .    | 1481                   | 26.9                          | 2.9                      | 1656                   | 61.6                          | 1.2                      |

TABLE L.—BOYS. COMPARATIVE TABLE OF STATURE—JEWISH DEPENDENT CHILDREN (GERSHEL) AND AMERICAN CHILDREN (BOAS)

| Age                | Boas 45,000 Amer. | Gershel 1778 Jew. Dep. | The average Jewish Dep. Shorter than Amer. Boys—by No. of Inches | The No. of Jewish Dep. of Aver. Amer. Stature | No. of Jewish Dep. Boys Shorter than Amer. Boys | No. of Jewish Dep. Boys Taller than Amer. Boys |
|--------------------|-------------------|------------------------|--|---|---|--|
| 5½ years . . . . . | 41.7              | 40.14                  | 1.6  | 39  | 145   | 19   |
| 6½ " . . . . .     | 43.9              | 42.41                  | 1.5  | 24  | 186   | 49   |
| 7½ " . . . . .     | 46.0              | 44.67                  | 1.33   | 28  | 142   | 49   |
| 8½ " . . . . .     | 48.8              | 46.67                  | 2.13   | 24  | 159   | 32   |
| 9½ " . . . . .     | 50.0              | 48.40                  | 1.6  | 31  | 150   | 48   |
| 10½ " . . . . .    | 51.9              | 50.20                  | 1.68   | 41  | 118   | 56   |
| 11½ " . . . . .    | 53.6              | 50.20                  | 3.40   | 16  | 129   | 24   |
| 12½ " . . . . .    | 55.4              | 53.01                  | 2.4  | 18  | 71  | 17   |
| 13½ " . . . . .    | 57.5              | 54.22                  | 3.28   | 4   | 38  | 4  |
| 14½ " . . . . .    | 60.0              | 54.42                  | 5.58   | 0   | 12  | 0  |
| 15½ " . . . . .    | 62.9              | 55.0                   | 7.9  | 0   | 2   | 0  |

See Table "B."



TABLE M.—GIRLS. COMPARATIVE TABLE OF STATURE—JEWISH  
DEPENDENT CHILDREN (GERSHEL) AND AMERICAN  
CHILDREN (BOAS)

| <i>Age</i>         | <i>Boas<br/>45,000<br/>Amer.</i> | <i>Gershel<br/>1778<br/>Jew. Dep.</i> | <i>The<br/>Average<br/>Jewish<br/>Dep.<br/>Shorter<br/>than Aver.<br/>Amer.<br/>Girls by<br/>No. of<br/>Inches</i> | <i>No. of<br/>Jew. Dep.<br/>of Aver.<br/>Stature<br/>of<br/>Amer.<br/>Child</i> | <i>No. of<br/>Jew. Dep.<br/>Girls<br/>Shorter<br/>than Aver.<br/>Amer.<br/>Girl</i> | <i>No. of<br/>Jew. Dep.<br/>Girls<br/>Taller<br/>than Aver.<br/>Amer.<br/>Girl</i> |
|--------------------|----------------------------------|---------------------------------------|--|---|---|--|
| 5½ years . . . . . | 41.3                             | 40.27                                 | 1.03   | 19  | 97  | 45   |
| 6½ " . . . . .     | 43.3                             | 41.85                                 | 1.45   | 23  | 106   | 45   |
| 7½ " . . . . .     | 45.7                             | 44.4                                  | 1.3  | 28  | 108   | 31   |
| 8½ " . . . . .     | 47.7                             | 46.                                   | 1.3  | 23  | 99  | 45   |
| 9½ " . . . . .     | 49.7                             | 49.                                   | 0.7  | 13  | 79  | 32   |
| 10½ " . . . . .    | 51.7                             | 49.                                   | 2.7  | 12  | 66  | 15   |
| 11½ " . . . . .    | 53.8                             | 52.18                                 | 1.62   | 6   | 63  | 15   |
| 12½ " . . . . .    | 56.1                             | 54.53                                 | 1.53   | 4   | 22  | 8  |
| 13½ " . . . . .    | 58.5                             | 56.18                                 | 2.32   | 3   | 18  | 7  |
| 14½ " . . . . .    | 60.4                             | 56.44                                 | 3.96   | 2   | 11  | 1  |
| 15½ " . . . . .    | 61.6                             | 58.71                                 | 2.89   | 2   | 5   | 0  |

See Table "C."

TABLE N.—A TABLE OF THE STATURE FOR SUCCESSIVE AGES OF  
JEWISH DEPENDENT CHILDREN IN AMERICA, NORMAL JEWISH  
CHILDREN IN RUSSIA (WEISSENBURG) AND NORMAL  
AMERICAN NON-JEWISH CHILDREN (BOAS)

| <i>Age</i>        | <i>Boys</i>  |   |                                     | <i>GIRLS</i>   |                          |             |
|-------------------|--|---|-------------------------------------|----------------|--------------------------|-------------|
|                   | <i>Jewish<br/>Depen-<br/>dent Boys<br/>(Gershel)</i> | <i>Jews of<br/>South<br/>Russia<br/>(Weissen-<br/>berg)</i> | <i>American<br/>Boys<br/>(Boas)</i> | <i>Gershel</i> | <i>Weissen-<br/>berg</i> | <i>Boas</i> |
| 5 years . . . . . | 40.14  | 40.00   | 41.7                                | 40.27          | 39.25                    | 41.3        |
| 6 " . . . . .     | 42.41  | 42.75   | 43.9                                | 41.85          | 42.52                    | 43.3        |
| 7 " . . . . .     | 44.67  | 44.13   | 46.0                                | 44.40          | 44.68                    | 45.7        |
| 8 " . . . . .     | 46.67  | 45.51   | 48.8                                | 46.40          | 46.06                    | 47.7        |
| 9 " . . . . .     | 48.40  | 47.22   | 50.0                                | 49.00          | 47.24                    | 49.7        |
| 10 " . . . . .    | 50.20  | 49.10   | 51.9                                | 49.00          | 49.05                    | 51.7        |
| 11 " . . . . .    | 50.20  | 50.40   | 53.6                                | 52.18          | 52.20                    | 53.8        |
| 12 " . . . . .    | 53.01  | 52.95   | 55.4                                | 54.53          | 55.59                    | 56.1        |
| 13 " . . . . .    | 54.22  | 54.25   | 57.5                                | 56.18          | 56.06                    | 58.5        |
| 14 " . . . . .    | 54.40  | 57.00   | 60.0                                | 56.44          | 58.42                    | 60.4        |
| 15 " . . . . .    | 55.00  | 58.34   | 62.9                                | 58.71          | 59.25                    | 61.6        |

TABLE O.—A TABLE OF THE ABSOLUTE ANNUAL INCREASE IN HEIGHT OF BOYS AND GIRLS

| Age            | Boys    |                  |      | Girls   |                  |      |
|----------------|---------|------------------|------|---------|------------------|------|
|                | Gershel | Weissen-<br>berg | Boas | Gershel | Weissen-<br>berg | Boas |
| 5-6 years..... | 2.27    | 2.75             | 2.2  | 1.58    | 5.26             | 2.0  |
| 6-7 ".....     | 2.26    | 1.38             | 2.1  | 2.55    | 2.16             | 2.4  |
| 7-8 ".....     | 2.00    | 1.38             | 2.8  | 2.00    | 1.38             | 2.0  |
| 8-9 ".....     | 1.73    | 1.81             | 1.2  | 2.70    | 1.18             | 2.0  |
| 9-10 ".....    | 1.82    | 1.78             | 1.9  | 0.0     | 1.81             | 2.0  |
| 10-11 ".....   | 0.0     | 1.30             | 1.7  | 3.18    | 3.15             | 2.1  |
| 11-12 ".....   | 2.84    | 2.55             | 1.8  | 2.35    | 3.39             | 2.3  |
| 12-13 ".....   | 1.21    | 1.30             | 2.1  | 1.65    | 0.47             | 2.4  |
| 13-14 ".....   | 0.20    | 2.75             | 2.5  | 0.26    | 2.36             | 1.9  |
| 14-15 ".....   | 0.58    | 1.34             | 2.9  | 2.27    | 0.83             | 1.2  |

Analysis of tables "M" and "N," with reference to boys:

I. Shows that for each year, normal American boys are considerably taller than Jewish dependent boys in America and taller than normal Jewish boys of South Russia.

This must be expected an account of the sturdy character of the American boy of to-day, representing, as the average American boy does, the hardy stock of northern Europe, the Teutonic, Gallic, Anglo-Saxon and Norse races, known for their braun and muscle and the stature of their individuals.

II. That from the fifth to the thirteenth years Jewish dependent boys of New York City, remembering that such boys are almost all of Russian parentage, *are as tall as, and during several years (7th, 8th, 9th, 10th and 12th years) are taller than, the normal Jewish boys of South Russia.*

Evidently the Jewish dependent boys, during the ages from the fifth to the thirteenth years, have about the same characteristics, as far as stature is concerned, as the normal Jewish boys of South Russia, keeping in mind that

the Russian Jewish boys of South Russia are generally of a Ghetto or pale product, and in general characteristics, so far as bringing up and environment are concerned, are similar to the American dependent Jewish child.

These Jewish dependent children, coming from conditions, such as inadequate nourishment, cramped surroundings, and debilitated environment, similar to those which the Jewish boy in South Russia suffers, would be found, as the figures show, to be of about the same stature. *But the phenomenon that for the 7th, 8th, 9th, 10th and 12th years, the Jewish American dependent boys are considerably taller than the children of South Russia, who are not dependent, can be accounted for by the greater freedom of the parent in earning a better livelihood than such Jewish boys experience in America, and by the absence of the stifling influences on mind and body which life in Russia furnishes to the Jewish boy of the pale or Ghetto product.*

It is my opinion that some time in the future, when statistics are compiled of the anthropometric measurements of normal Jewish American children, it will be found that the normal Jewish American child is much taller than the normal Jewish child in Russia.

III. That in the thirteenth and fourteenth and fifteenth years these Jewish boys are considerably shorter than the Jewish boys of South Russia.

This phenomenon may be accounted for by the fact that the child during the important age of puberty had undergone many sufferings and privations, at an age when freedom and proper nourishment are absolute essentials; and the fact of the child's commitment to an institution for "dependents" may be taken as prima facie evidence that he has undergone many months of privation before he actually presents himself for admission. This condition is not met with in the girls. In dealing with normal non-Jewish children, several authors have found that the development

of girls is not as much affected by poverty as is the development of boys.

IV. Rate of growth.

- A. That from the 5th to the 6th year these Jewish dependent boys grow more rapidly than the normal American boys, but less rapidly than normal Jewish boys of South Russia.
- B. From the 6th to the 7th year Jewish dependent boys grow more rapidly than normal Jewish boys of South Russia, but less rapidly than normal non-Jewish American boys.
- C. From the 7th to the 8th year these Jewish dependent boys grow more rapidly than normal Jewish boys of South Russia, but less rapidly than normal non-Jewish American boys.
- D. From the 8th to the 9th year Jewish dependent boys grow less rapidly than normal Jewish boys of South Russia, but more rapidly than the normal American non-Jewish boy.
- E. From the 9th to the 10th year Jewish dependent boys grow more rapidly than normal Jewish boys of South Russia, but less rapidly than the normal non-Jewish American boy.
- F. From the 10th to the 11th year Jewish dependent boys' stature is stationary, while the normal Jewish boys of South Russia and normal American boys materially increase in height.
- G. From the 11th to the 12th year Jewish dependent boys increase in height more than normal Jewish boys in Russia and more than normal non-Jewish American boys.
- H. From the 12th to the 13th year Jewish dependent boys grow less rapidly than either the Jewish boys of South Russia or normal non-Jewish American boys.

## HEIGHT AND WEIGHT

- I. From the 13th to the 14th year Jewish dependent boys show less rapid growth, while both Jewish boys of South Russia and normal American boys increase considerably.
- J. From the 14th to the 15th year Jewish dependent boys show less rapid growth, while both normal Jewish boys of South Russia and normal American boys increase considerably.

## GIRLS

An analysis of Tables "M" and "N" in reference to girls shows:

I. That for each year normal American girls are taller than Jewish dependent girls and the normal Jewish girls of South Russia.

II. *That for the 5th, 8th, 9th and 13th years Jewish dependent girls are taller than normal Jewish girls of South Russia, and for the 7th, 10th and 11th years Jewish dependent girls are only a small fraction shorter than normal Jewish girls of South Russia.*

III. That at the 12th, 14th and 15th years Jewish dependent girls are smaller than normal Jewish girls of South Russia, but approximate more closely to the normal Jewish girls of South Russia than Jewish dependent boys do to the normal Jewish boys of South Russia.

IV. Rate of growth.

- A. From the 5th to the 6th year Jewish dependent girls grow considerably less than normal Jewish girls of South Russia.
- B. From the 6th to the 7th year Jewish dependent girls grow more rapidly than either Jewish girls of South Russia or normal American girls.
- C. From the 7th to the 8th year Jewish dependent girls grow more rapidly than the normal Jewish

## HEIGHT OF CHILDREN

girls of South Russia, but at the same rate as normal American girls.

D. From the 8th to the 9th year Jewish dependent girls grow more rapidly than either the normal Jewish girls of South Russia or the normal American girls.

E. From the 9th to the 10th year the stature of the Jewish dependent girls is stationary, while there is a considerable increase for the normal Jewish girl of South Russia and the normal American girl.

F. From the 10th to the 11th year the Jewish dependent girl grows more rapidly than the normal Jewish girl of South Russia and the normal American girl.

G. From the 11th to the 12th year the Jewish dependent girl grows less rapidly than the normal Jewish girl of South Russia.

H. From the 12th to the 13th year the Jewish dependent girl grows more rapidly than the normal Jewish girl of South Russia and less rapidly than the normal American girl.

I. From the 13th to the 14th year the Jewish dependent girl grows considerably less than the normal Jewish girl of South Russia and the normal American girl.

J. From the 14th to the 15th year the Jewish dependent girls grow more rapidly than either.

V. From the 10th to the 13th year Jewish dependent girls increase in height 7.18 inches; normal Jewish girls of South Russia increase in height 7.01 inches; normal American girls increase in height 6.8 inches.

It may be of interest to draw attention to the fact that from the 10th to the 11th years Jewish dependent boys' and from the 9th to the 10th years Jewish dependent girls'



growth in height is stationary, and each is succeeded by a year of accelerated growth, and that from the 12th to the 15th years the growth of Jewish dependent boys is markedly retarded when compared with the growth of the Jewish boy of South Russia and the normal American boy, while for the same years Jewish dependent girls do not show any such retardation of growth.

BIBLIOGRAPHY.

- Barr, A. L.—Some Anthropometric Data of Western College Girls. *Am. Phys. Ed. Rev.*, viii, 245.
- Bayer, H. G.—Growth of U. S. Naval Cadets. *Proc. U. S. Naval Inst.*, xxi.
- Boas.—Statistics of Growth. Report of the Commissioner of Education for 1904.
- Boas, F. W.—Growth of Toronto Children. *Rep. U. S. Com. Ed.*, 1896-7, p. 1541.
- Bowditch, H. P.—Growth of Children, 8th Ann. Rep. Mass. State Board of Health, 1875.
- Burk, F.—Growth of Children in Height and Weight. *Am. Jour. Phy.*, ix, 253. Bib.
- Christopher, W. S.—Measurements of Chicago School Children, Chicago, 1900.
- Gilbert, J. A.—Researches on Mental and Physical Development of School Children. *Studies from Yale Psych. Lab.*, ii, 40.
- Gilbert, J. A.—Researches upon School Children and College Students. *Univ. Iowa. Studies in Psych.*, i, 1, Iowa City, 1897.
- Hall, G. S.—Adolescence. New York, 1904. Chapter i.
- Hastings, W. W.—Manual for Physical Measurements, Springfield, Mass., 1902.
- Hitchcock, E.—Synoptic Exhibit of 15,000 Examinations. *Proc. Fifth Ann. Meeting Am. Assoc. for Adv. of Phys. Ed.*, 1890.
- Hitchcock, E.—Comparative Study of Measurements of Male and Female Students at Amherst, Mt. Holyoke, and Wellesley. *Proc. Am. Assoc. for Adv. of Phys. Ed.*, 1891, vi, 37.
- Hitchcock, E.—Results of Anthropometry. Amherst, 1892.
- Hitchcock, E.—Comparative Anthropometry of Males and Females, Amherst, 1903.
- Hitchcock, E., and Phillips, P. G.—Physical Growth of Students during Course at Amherst College, Amherst.
- Hitchcock, E., and Seelye, N. H.—Anthropometric Manual. 2d ed Amherst, Mass., 1889.
- Hitchcock, E., and Seelye, N. H.—Physical Measurements of Young Men. Boston, 1893.

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- Key, A.—Schulhygienische Untersuchungen. Hamburg, 1889, pp. 346.
- MacDonald, A.—Experimental Study of Children. Rep. U. S. Com. Ed. 97-98. Chapters xxi-xxv, Bib.
- Malling-Hansen, H.—Perioden im Gewicht der Kinder und in der Sonnen-Wärme, Copenhagen, 1881.
- Moon, S. B.—Measurements of Boys of McDonough School. McD. School, Md., 1892.
- Moon, S. B.—Growth of Boys. Rep. 10th Ann. Meet. Amer. Assoc. Adv. of Phys. Ed.
- Papers on Anthropometry, Amer. Statist. Assoc., Boston, 1894.
- Peckham, G. W.—Growth of Children, 6th Ann. Rep. State Board of Health, Wisconsin, 1881.
- Phillips, P. G.—Anthropometric Study of Students of Amherst College, Amherst, 1903.
- Phillips, P. G.—Is the Physique of the American College Man and Woman Degenerating? Am. Phys. Ed. Rev., ix.
- Porter, W. F.—Growth of St. Louis Children. Trans. Acad. Sci. St. Louis, vi, 263.
- Quetelet, A.—Anthropometry. Brussels, 1870.
- Roberts, C. F.—Manual of Anthropometry, London, 1878.
- Schmid-Mennard, K.—Einfluss der Jahreszeit und der Schule auf das Wachsthum der Kinder, Zeits. f. Sch. ges. pfl. 1894, vii, 626, 1896, ix, 317.
- Smedley, F. W.—Report of Committee on Child-Study. 46th Ann. Rep. of Board of Education, Chicago, 1899-1900. (Child-Study Rep. 2.)
- Vierordt, H.—Daten und Tabellen. Jena, 1893.
- Vines, J. H.—Physique of the Public Schools Boy. (England) Amer. Phys. Ed. Rev., ix, 110.
- West, G. M.—Anthropometrische Untersuchungen über die Schulkinder in Worcester, Mass. Archiv für Anthrop., xxii, 13.

## PART II

### WEIGHT

MUCH time has been devoted to the subject of height, because of the positive results from such investigations. It has been said that in spite of the fact that the extremes obtained in the weight and height of children are widely different, it is still true that the normal heights and weights, especially the normal increase for each year, are very closely approximated by the height and weight of the average child.

The rate of growth in height and weight is determined by a number of factors. Heredity and race seem to predetermine the ultimate size of any individual. The influence of race upon growth asserts itself most prominently about the age of puberty. The measurements of height are valuable, because they are generally not liable to fluctuate. Normal increase is almost the best sign of health, whereas, retardation or stunted growth is usually the sign of serious derangement. The study of weight and height combined gives us tables from which many other important data can be inferred. Maximum growth in height is usually reached before the 26th year. The growth in weight is a variable factor. Weight is markedly influenced by disease, environment, toil, proper or improper nutrition, hygiene, etc. In fact, the greatest care must be exercised in making allowance for temporary abnormalities. Gains or losses of a number of pounds in a week have been found by the writer not to be unusual. For this reason, he believes that tables of average weight of children can only be considered authoritative when a very large number of children, many thousands in number, have been investigated.

It is recognized that any irregularity in growth indi-

cates bad conditions. Interruptions in growth are not easily made up, and it is noted that if a child does not reach its normal physical growth at the normal period, he is liable to show a permanent deficiency of some kind, although it may not be evident in the height or weight.

It was found in the investigations of the Anthropologic Committee in England, that boys of the more favored classes are taller and heavier than boys of the industrial classes. I have been unable to find, after a careful investigation, any detailed record of weights for Jewish girls and, therefore, have been unable to compare the results of my investigation with any other similar records.

While imperfect nutrition may retard increase in weight and height, weight is no positive index of the health of the child; as, for instance, loss of muscular tissue may be made up or replaced by fat and water. Height, once attained, cannot be reduced to any appreciable extent.

My investigations into the weight of Jewish dependent children of the city of New York was made upon 1900 boys and 1193 girls. The weights were taken in ordinary indoor costume, and at the time that these children presented themselves for admission to a child-caring institution.

I will first compare the average weight of the Jewish dependent boy in the city of New York with the average weight of the normal Jewish boy in Russia.

An analysis of Table "D" for boys shows that at the 5th, 8th, 10th, 11th and 12th years Jewish dependent boys weigh more than the normal Jewish boy of South Russia, and for the 7th, 9th and 13th years Jewish dependent boys weigh only a trifle less than the normal Jewish boy of South Russia. At the 14th year Jewish dependent boys weigh 5.70 pounds less than the normal Jewish boy of South Russia, and at the 15th year Jewish dependent boys weigh 5.16 pounds less than the normal Jewish boys of South Russia.

TABLE A.—SHOWING AVERAGE WEIGHT OF SUCCESSIVE AGES OF  
1900 BOYS AND 1193 GIRLS IN AUTHOR'S SERIES

| 1900 Boys         |                                   |  |                                       |   |
|-------------------|-----------------------------------|--|---------------------------------------|---|
| <i>Age</i>        | <i>Number of<br/>Observations</i> | <i>Average for<br/>Each Year in<br/>Pounds</i> | <i>Absolute An-<br/>nual Increase</i> | <i>Percentage An-<br/>nual Increase</i> |
| 3 years . . . . . | 17                                | 30.94  | ..                                    | ..                                      |
| 4 " . . . . .     | 104                               | 35.12  | 4.18                                  | 0.13                                    |
| 5 " . . . . .     | 227                               | 37.17  | 2.05                                  | 0.058                                   |
| 6 " . . . . .     | 274                               | 40.77  | 3.60                                  | 0.096                                   |
| 7 " . . . . .     | 242                               | 44.64  | 3.87                                  | 0.09                                    |
| 8 " . . . . .     | 237                               | 50.34  | 5.70                                  | 0.10                                    |
| 9 " . . . . .     | 243                               | 53.65  | 3.31                                  | 0.066                                   |
| 10 " . . . . .    | 222                               | 58.86  | 5.21                                  | 0.097                                   |
| 11 " . . . . .    | 162                               | 63.96  | 5.10                                  | 0.086                                   |
| 12 " . . . . .    | 109                               | 68.81  | 4.85                                  | 0.075                                   |
| 13 " . . . . .    | 48                                | 73.20  | 4.39                                  | 0.063                                   |
| 14 " . . . . .    | 12                                | 77.66  | 4.46                                  | 0.06                                    |
| 15 " . . . . .    | 3                                 | 85.00  | 7.34                                  | 0.094                                   |

TABLE B

| 1193 GIRLS        |                                   |  |                                       |   |
|-------------------|-----------------------------------|--|---------------------------------------|---|
| <i>Age</i>        | <i>Number of<br/>Observations</i> | <i>Average for<br/>Each Year<br/>in Pounds</i> | <i>Absolute An-<br/>nual Increase</i> | <i>Percentage An-<br/>nual Increase</i> |
| 3 years . . . . . | 20                                | 30.70  | ..                                    | ..                                      |
| 4 " . . . . .     | 56                                | 33.64  | 2.94                                  | 0.095                                   |
| 5 " . . . . .     | 177                               | 36.89  | 3.25                                  | 0.096                                   |
| 6 " . . . . .     | 198                               | 39.90  | 3.01                                  | 0.081                                   |
| 7 " . . . . .     | 177                               | 43.94  | 4.04                                  | 0.10                                    |
| 8 " . . . . .     | 169                               | 48.35  | 4.41                                  | 0.10                                    |
| 9 " . . . . .     | 128                               | 52.67  | 4.32                                  | 0.09                                    |
| 10 " . . . . .    | 97                                | 60.26  | 7.59                                  | 0.14                                    |
| 11 " . . . . .    | 85                                | 64.11  | 3.85                                  | 0.063                                   |
| 12 " . . . . .    | 36                                | 75.66  | 11.55                                 | 0.18                                    |
| 13 " . . . . .    | 30                                | 81.70  | 6.04                                  | 0.08                                    |
| 14 " . . . . .    | 12                                | 78.50  | 3.20                                  | ..                                      |
| 15 " . . . . .    | 8                                 | 93.00  | 11.30                                 | ..                                      |

TABLE C.—AVERAGE WEIGHT AND YEARLY INCREMENT IN POUNDS OF SOUTH RUSSIAN JEWS

DR. S. WEISSENBERG

| <i>Age</i>   | MALES                 |                               |                                 |
|--------------|-----------------------|-------------------------------|---------------------------------|
|              | <i>Number Weighed</i> | <i>Average Weight, Pounds</i> | <i>Yearly Increment, Pounds</i> |
| 5 years..... | 7                     | 35.6                          | ..                              |
| 6 ".....     | 10                    | 42.17                         | 6.57                            |
| 7 ".....     | 24                    | 44.04                         | 1.87                            |
| 8 ".....     | 25                    | 48.71                         | 4.67                            |
| 9 ".....     | 51                    | 53.80                         | 5.09                            |
| 10 ".....    | 82                    | 56.52                         | 2.72                            |
| 11 ".....    | 62                    | 60.04                         | 3.52                            |
| 12 ".....    | 51                    | 67.65                         | 7.61                            |
| 13 ".....    | 53                    | 73.35                         | 5.70                            |
| 14 ".....    | 57                    | 83.36                         | 10.01                           |
| 15 ".....    | 50                    | 90.16                         | 6.80                            |

TABLE D.—SHOWING WEIGHT OF JEWISH CHILDREN

| <i>Age</i>   | BOYS                              |  | GIRLS                             |
|--------------|-----------------------------------|--|-----------------------------------|
|              | <i>Gershel<br/>1909<br/>U. S.</i> | <i>Weissenberg<br/>1895<br/>South Russia</i> | <i>Gershel<br/>1909<br/>U. S.</i> |
| 3 years..... | 30.94                             | ..   | 30.70                             |
| 4 ".....     | 35.12                             | ..   | 33.64                             |
| 5 ".....     | 37.17                             | 35.6   | 36.89                             |
| 6 ".....     | 40.77                             | 42.17  | 39.90                             |
| 7 ".....     | 44.04                             | 44.04  | 43.94                             |
| 8 ".....     | 50.34                             | 48.71  | 48.35                             |
| 9 ".....     | 53.65                             | 53.80  | 52.67                             |
| 10 ".....    | 58.86                             | 56.52  | 60.26                             |
| 11 ".....    | 63.96                             | 60.04  | 64.11                             |
| 12 ".....    | 68.81                             | 67.65  | 75.66                             |
| 13 ".....    | 73.20                             | 73.35  | 81.70                             |
| 14 ".....    | 77.66                             | 83.36  | ..                                |
| 15 ".....    | 85.00                             | 90.16  | 93.00                             |



TABLE E.—YEARLY INCREMENT OF WEIGHT—JEWISH BOYS IN  
RUSSIA (WEISSENBERG) AND JEWISH DEPENDENT  
BOYS OF NEW YORK CITY

| <i>Age</i>      | <i>Russian Jewish Boys</i><br>472<br><i>Weissenberg</i> | <i>Jewish Dependent Boys</i><br>1000 |
|-----------------|---|--------------------------------------|
| 5- 6 years..... | 6.57  | 3.60                                 |
| 6- 7 ".....     | 1.87  | 3.87                                 |
| 7- 8 ".....     | 4.67  | 5.70                                 |
| 8- 9 ".....     | 5.00  | 3.31                                 |
| 9-10 ".....     | 2.72  | 5.21                                 |
| 10-11 ".....    | 3.52  | 5.10                                 |
| 11-12 ".....    | 7.61  | 4.85                                 |
| 12-13 ".....    | 5.70  | 4.39                                 |
| 13-14 ".....    | 10.01   | 4.46                                 |
| 14-15 ".....    | 6.80  | 7.34                                 |

*Rate of Growth.*—In Table "E" it is seen that from the fifth to the fifteenth years, the normal Russian Jewish boy gains 54.56 pounds, and the Jewish dependent boy during the same years gains 47.83 pounds, or that the Jewish dependent boy in the city of New York at the 15th year weighs 6.73 pounds less than the normal Jewish boy in Russia. From the 5th to the 10th years normal Jewish boys in Russia gain 20.92 pounds, and Jewish dependent boys of the city of New York gain 21.60 pounds, so that from the 5th to the 10th years, the Jewish dependent boys of the city of New York gain 0.77 pound more than the normal Jewish boys in South Russia.

From the 10th to the 15th years the normal Jewish boy of Russia gains 33.64 pounds and the Jewish dependent boy of the city of New York gains 26.14 pounds, so that the Jewish boy of South Russia gains 7.50 pounds more than the Jewish dependent boy of the city of New York.

This retardation in growth in weight corresponds to the retardation in development in height as noted before during the 13th, 14th and 15th years.

I will now compare the weight of the Jewish dependent

# WEIGHT

boy of the city of New York with the average weight of the normal American boy.

TABLE F.—SHOWING AVERAGE MODERN WEIGHT, CALCULATED FROM A TOTAL OF 68,000 CHILDREN IN VARIOUS CITIES (BURK)

| Age              | BOYS                                   |                                 | GIRLS                                  |                                 |
|------------------|--|---------------------------------|--|---------------------------------|
|                  | <i>Average for Each Year in Pounds</i> | <i>Absolute Annual Increase</i> | <i>Average for Each Year in Pounds</i> | <i>Absolute Annual Increase</i> |
| 6½ years . . . . | 45.2                                   | ...                             | 43.4                                   | ...                             |
| 7½ " . . . .     | 49.5                                   | 4.3                             | 47.7                                   | 4.3                             |
| 8½ " . . . .     | 54.5                                   | 5.0                             | 52.5                                   | 4.8                             |
| 9½ " . . . .     | 59.6                                   | 5.1                             | 57.4                                   | 4.9                             |
| 10½ " . . . .    | 65.4                                   | 5.8                             | 62.9                                   | 5.5                             |
| 11½ " . . . .    | 70.7                                   | 5.3                             | 69.5                                   | 6.6                             |
| 12½ " . . . .    | 76.9                                   | 6.2                             | 78.7                                   | 9.2                             |
| 13½ " . . . .    | 84.8                                   | 7.9                             | 88.7                                   | 1.0                             |
| 14½ " . . . .    | 95.2                                   | 10.4                            | 98.3                                   | 4.6                             |
| 15½ " . . . .    | 107.4                                  | 12.2                            | 106.7                                  | 8.4                             |

Burk refers to data of the weights of

|       |                    |         |
|-------|--------------------|---------|
| 24500 | children of Boston | U. S. A |
| 34500 | " " St. Louis      | " " "   |
| 9600  | " " Milwaukee      | " " "   |

Making a total of 68,600 children—arranged so that at each age the number of children from each city has been represented proportionately in the results in the above table.

Tables "G" and "H" give the comparison of the weight for successive years of Jewish dependent boys and girls of the city of New York with the results collected by Burk of the average weight of normal American boys and girls. The results of Burk's tables were made by collecting data of the weights of 24,500 children of Boston, 34,500 of St. Louis and 9,600 children of Milwaukee, making a total of 68,600 children. At each age the number of children from each city has been represented proportionally in the results.

TABLE G.—BOYS. COMPARATIVE TABLE OF WEIGHTS—JEWISH DEPENDENT BOYS (GERSHEL) AND AMERICAN BOYS (BURK)

| Age          | Burk,<br>American<br>Boys | Gershel,<br>1000<br>Jewish<br>Dependent<br>Boys | Jewish<br>Dependent<br>Boys<br>Weigh<br>less than<br>American Boy | Number<br>of Jewish<br>Dependent<br>Boys<br>Weighed | Number<br>of Jewish<br>Dependent<br>Boys who<br>Weigh<br>less than<br>American<br>Average | Number<br>of Jewish<br>Dependent<br>Boys<br>Who<br>Weigh<br>more<br>than<br>American<br>Average | Number<br>of Jewish<br>Dependent<br>Boys<br>Who<br>Weigh<br>the<br>Same as<br>Average<br>American. |
|--------------|---------------------------|---|---|---|---|---|--|
|              | Pounds                    | Pounds  | Pounds  |   |   |   |  |
| 6 years..... | 45.2                      | 40.77   | 4.43  | 274   | 167   | 83  | 24   |
| 7 ".....     | 49.5                      | 44.64   | 4.86  | 242   | 180   | 46  | 16   |
| 8 ".....     | 54.5                      | 50.34   | 4.16  | 237   | 161   | 65  | 11   |
| 9 ".....     | 59.6                      | 53.65   | 5.95  | 243   | 184   | 55  | 25   |
| 10 ".....    | 65.4                      | 58.86   | 6.54  | 222   | 182   | 36  | 4  |
| 11 ".....    | 70.7                      | 63.96   | 6.74  | 162   | 121   | 37  | 4  |
| 12 ".....    | 76.9                      | 68.81   | 8.09  | 109   | 90  | 16  | 3  |
| 13 ".....    | 84.8                      | 73.20   | 11.6  | 48  | 43  | 5   | 0  |
| 14 ".....    | 95.2                      | 77.66   | 17.54   | 12  | 12  | 0   | 0  |
| 15 ".....    | 107.4                     | 85.   | 22.4  | 3   | 3   | 0   | 0  |

TABLE H.—GIRLS. COMPARATIVE TABLE OF WEIGHTS—JEWISH DEPENDENT GIRLS (GERSHEL) AND AMERICAN GIRLS (BURK)

| Age          | Burk,<br>American<br>Girls | Gershel,<br>1193<br>Jewish<br>Dependent<br>Girls | Jewish<br>Dependent<br>Girls<br>Weigh<br>less than<br>American Girls | Number<br>of Jewish<br>Dependent<br>Girls<br>Weighed | Number<br>of Jewish<br>Dependent<br>Girls<br>Who<br>Weigh<br>less than<br>American<br>Average | Number<br>of Jewish<br>Dependent<br>Girls<br>Who<br>Weigh<br>more than<br>American<br>Average | Number<br>of Jewish<br>Dependent<br>Girls<br>Who<br>Weigh<br>the same<br>as Average<br>American |
|--------------|----------------------------|--|--|--|---|---|---|
|              | Pounds                     | Pounds   | Pounds   |  |   |   |   |
| 6 years..... | 43.4                       | 39.90  | 3.50   | 198  | 136   | 50  | 12  |
| 7 ".....     | 47.7                       | 43.94  | 3.76   | 177  | 134   | 32  | 11  |
| 8 ".....     | 52.5                       | 48.35  | 4.15   | 160  | 120   | 40  | 9   |
| 9 ".....     | 57.4                       | 52.67  | 4.73   | 128  | 95  | 27  | 6   |
| 10 ".....    | 62.9                       | 60.26  | 2.64   | 97   | 62  | 32  | 3   |
| 11 ".....    | 69.5                       | 64.11  | 5.39   | 85   | 57  | 23  | 5   |
| 12 ".....    | 78.7                       | 75.66  | 3.04   | 36   | 23  | 12  | 1   |
| 13 ".....    | 88.7                       | 81.70  | 7.00   | 30   | 21  | 9   | 0   |
| 14 ".....    | 98.3                       | 78.50  | 19.8   | 12   | 8   | 3   | 1   |
| 15 ".....    | 106.7                      | 93.00  | 13.7   | 8  | 6   | 2   | 0   |

TABLE I.—SHOWING THE WEIGHT OF SUCCESSIVE AGES IN DIFFERENT COUNTRIES (POUNDS)

| Age         | BOSTON |        | ST. LOUIS |        | OAKLAND |        | NEW YORK |        | IOWA  |        | MOSCOW |        | TURIN |        | ENGLAND |        |
|-------------|--------|--------|-----------|--------|---------|--------|----------|--------|-------|--------|--------|--------|-------|--------|---------|--------|
|             | Male   | Female | Male      | Female | Male    | Female | Male     | Female | Male  | Female | Male   | Female | Male  | Female | Male    | Female |
| 5½ years .. | 41.1   | 39.7   | ..        | ..     | ..      | ..     | 37.17    | 36.89  | ..    | ..     | ..     | ..     | 33.5  | 33.1   | 40.0    | 39.2   |
| 6½ " ..     | 45.2   | 43.3   | 43.7      | 41.7   | 47.6    | 45.9   | 40.77    | 39.90  | 45.9  | 41.6   | 44.1   | 42.8   | 36.8  | 36.2   | 44.4    | 41.7   |
| 7½ " ..     | 49.1   | 47.5   | 47.8      | 45.9   | 50.2    | 48.1   | 44.64    | 43.94  | 50.4  | 51.4   | 48.5   | 47.0   | 47.8  | 39.0   | 50.0    | 47.5   |
| 8½ " ..     | 53.9   | 52.0   | 52.5      | 50.5   | 54.2    | 52.2   | 50.34    | 48.35  | 55.0  | 51.0   | 53.1   | 48.5   | 45.6  | 41.9   | 54.9    | 52.1   |
| 9½ " ..     | 59.2   | 57.1   | 57.5      | 55.3   | 59.6    | 58.6   | 53.65    | 52.67  | 61.6  | 58.1   | 61.1   | 56.4   | 49.4  | 48.3   | 60.4    | 55.5   |
| 10½ " ..    | 65.3   | 62.4   | 62.4      | 60.6   | 66.7    | 63.2   | 58.86    | 60.26  | 63.7  | 62.1   | 67.2   | 60.4   | 54.7  | 54.5   | 68.0    | 62.0   |
| 11½ " ..    | 70.2   | 68.8   | 68.3      | 66.6   | 72.0    | 69.7   | 63.06    | 64.11  | 72.4  | 69.2   | 73.4   | 66.8   | 58.6  | 59.3   | 72.0    | 68.1   |
| 12½ " ..    | 76.9   | 78.3   | 73.9      | 74.3   | 77.9    | 78.9   | 68.81    | 75.66  | 78.2  | 79.7   | 82.9   | 80.5   | 64.6  | 65.0   | ..      | ..     |
| 13½ " ..    | 84.8   | 88.7   | 80.7      | 84.9   | 89.4    | 90.7   | 73.20    | 81.70  | 90.9  | 94.1   | 91.5   | 89.3   | 72.8  | 76.1   | 82.6    | 87.2   |
| 14½ " ..    | 94.9   | 98.4   | 89.1      | 93.3   | 97.0    | 98.2   | 77.66    | ..     | 102.0 | 99.9   | 102.7  | 94.4   | 80.7  | 84.9   | 92.0    | 96.7   |

*Anthrop. Com.  
Over 30,000  
Persons*

*Pagliani  
1,048 Boys  
968 Girls*

*Erismann  
2,453 Boys  
1,495 Girls*

*Gilbert  
About 50 of  
Each Sex*

*Gershel  
1,000 Boys  
1,193 Girls*

?

*Porter  
16,295 Boys  
18,059 Girls*

*Bowditch  
13,691 Boys  
10,904 Girls*

Am. Journal Psychology, Vol. 9, No. 3, April, 1898. Frederick Burk: Growth of Children in Height and Weight.

TABLE J.—SHOWING ABSOLUTE ANNUAL INCREASE IN WEIGHT (POUNDS), OBTAINED BY SUBTRACTING  
SUCCESSIVE WEIGHT IN TABLE I

| Age<br>(Years) | BOSTON |        | ST. LOUIS |        | OAKLAND |        | NEW YORK                  |        | IOWA |        | MOSCOW |        | TURIN |        | ENGLAND |        |
|----------------|--------|--------|-----------|--------|---------|--------|---------------------------|--------|------|--------|--------|--------|-------|--------|---------|--------|
|                |        |        |           |        |         |        | <i>Jewish<br/>Depend.</i> |        |      |        |        |        |       |        |         |        |
| 5½ to 6½       | Male   | Female | Male      | Female | Male    | Female | Male                      | Female | Male | Female | Male   | Female | Male  | Female | Male    | Female |
| 6½ to 7½       | 4.1    | 3.7    | ..        | ..     | ..      | ..     | 3.60                      | 3.01   | ..   | ..     | ..     | ..     | 3.3   | 3.1    | 4.4     | 2.5    |
| 7½ to 8½       | 3.0    | 4.2    | 4.1       | 4.2    | ..      | ..     | 3.87                      | 4.04   | 5.6  | 5.8    | 3.3    | 4.4    | 6.0   | 2.8    | 5.6     | 5.8    |
| 8½ to 9½       | 4.9    | 4.6    | 4.7       | 4.6    | 4.0     | 4.1    | 5.70                      | 4.41   | 3.6  | 3.6    | 4.6    | 1.5    | 2.8   | 2.9    | 4.9     | 4.6    |
| 9½ to 10½      | 5.3    | 5.0    | 5.0       | 4.8    | 5.4     | 6.4    | 3.31                      | 4.32   | 6.6  | 7.1    | 8.0    | 7.9    | 3.8   | 6.4    | 5.5     | 3.4    |
| 10½ to 11½     | 6.1    | 5.3    | 4.9       | 5.3    | 7.1     | 4.6    | 5.21                      | 7.59   | 2.1  | 4.0    | 6.1    | 4.0    | 5.3   | 6.2    | 7.6     | 6.5    |
| 11½ to 12½     | 4.9    | 6.5    | 5.9       | 6.0    | 5.3     | 6.5    | 5.10                      | 3.85   | 8.7  | 7.1    | 6.2    | 6.4    | 3.9   | 4.8    | 4.0     | 6.1    |
| 12½ to 13½     | 6.7    | 9.5    | 7.7       | 7.7    | 5.9     | 9.2    | 4.87                      | 11.55  | 5.0  | 10.5   | 9.5    | 13.7   | 6.0   | 5.7    | 4.7     | 8.3    |
| 13½ to 14½     | 7.9    | 10.3   | 6.8       | 10.6   | 11.5    | 11.8   | 4.39                      | 6.04   | 12.7 | 14.4   | 8.6    | 8.8    | 8.2   | 11.1   | 5.9     | 10.8   |
| 14½ to 15½     | 10.1   | 9.8    | 8.4       | 8.4    | 7.6     | 7.5    | 4.46                      | 0.00   | 11.1 | 5.9    | 11.2   | 5.1    | 7.9   | 8.8    | 9.4     | 9.5    |
|                | 12.2   | 7.6    | 12.8      | 9.7    | 11.1    | 10.7   | 7.34                      | 11.30  | 15.0 | 11.3   | 14.1   | 5.5    | 11.5  | 11.7   | 10.7    | 9.6    |

## WEIGHT

It will be seen that comparatively few of the Jewish dependent boys and girls, at the time that they presented themselves for admission to a child-caring institution, weighed as much as the average American boy or girl, but a very large majority fell below the average weight of the normal American boy or girl.

From Table "J" we find that between the sixth and tenth years boys

|  |       |        |
|--|-------|--------|
| In Boston increase in weight. . . . .              | 20.2  | pounds |
| " St. Louis " " " . . . . .                        | 18.7  | "      |
| " Iowa " " " . . . . .                             | 17.9  | "      |
| " Moscow " " " . . . . .                           | 22.0  | "      |
| " Turin " " " . . . . .                            | 17.9  | "      |
| " England " " " . . . . .                          | 23.6  | "      |
| Jewish dependent boys increase in weight . . . . . | 18.09 | "      |

or from the sixth to the tenth years

|                              |     |        |
|------------------------------|-----|--------|
| Boys of Boston gain. . . . . | 2.1 | pounds |
| " " St. Louis gain. . . . .  | .6  | "      |
| " " Moscow gain. . . . .     | 3.9 | "      |
| " " England gain. . . . .    | 5.5 | "      |

more than Jewish dependent boys, and Jewish dependent boys gain 0.19 pound more than the boys of Iowa and the boys of Turin.

Between the tenth and fifteenth years boys

|  |       |        |
|--|-------|--------|
| In Boston increase in weight. . . . .              | 41.8  | pounds |
| " St. Louis " " " . . . . .                        | 39.0  | "      |
| " Oakland " " " . . . . .                          | 41.4  | "      |
| " Iowa " " " . . . . .                             | 52.5  | "      |
| " Moscow " " " . . . . .                           | 49.6  | "      |
| " Turin " " " . . . . .                            | 37.5  | "      |
| " England " " " . . . . .                          | 34.7  | "      |
| Jewish dependent boys increase in weight . . . . . | 26.14 | "      |

or that from the tenth to the fifteenth years

|                                      |      |        |
|--------------------------------------|------|--------|
| Boys of Boston gain. . . . .         | 15.7 | pounds |
| " " St. Louis gain. . . . .          | 12.9 | "      |
| " " Oakland gain. . . . .            | 15.3 | "      |
| " " Iowa gain. . . . .               | 26.4 | "      |
| " " Moscow gain. . . . .             | 23.5 | "      |
| " " Turin gain. . . . .              | 11.4 | "      |
| " " England gain. . . . .            | 8.6  | "      |
| More than the Jewish dependent boys. |      |        |



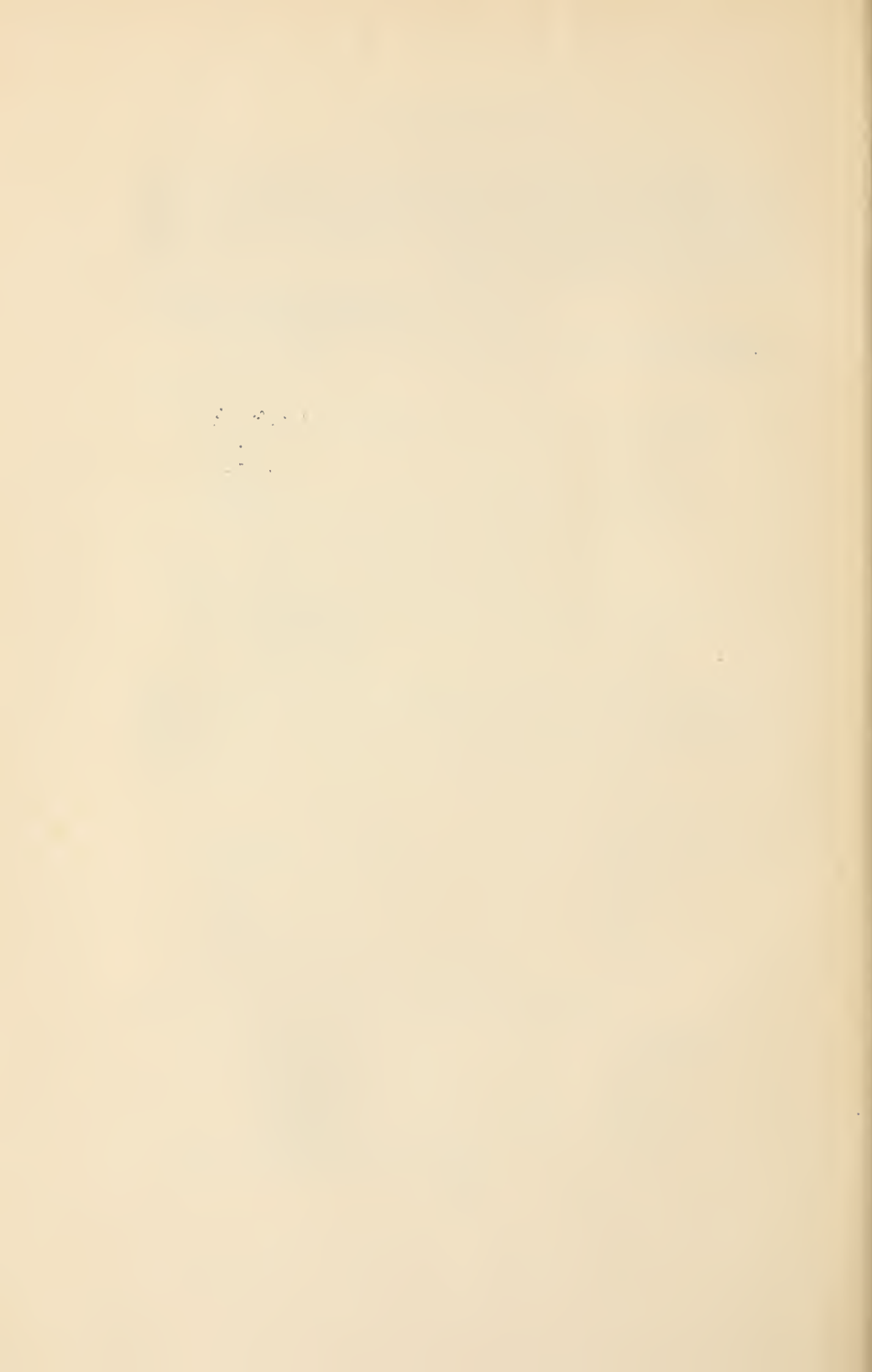
## HEIGHT AND WEIGHT

It will be seen from the above that the retardation in the development as far as the weight is concerned is much more marked from the tenth to the fourteenth years than from the sixth to the tenth years.

MILTON A. GERSHEL, B.S., M.D.,  
New York City.

April, 1911.

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